



Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

DR. AJIT K. ROY HONORED AS ASME FELLOW



The American Society of Mechanical Engineering (ASME) recently selected Dr. Ajit K. Roy, of the Materials and Manufacturing Directorate, as an ASME Fellow for his leadership, technical contributions, and research in composite materials. His work in a wide variety of composite technologies has advanced the state of the art.



Air Force Research Laboratory
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Accomplishment

Dr. Roy received the award in recognition of over 20 years of groundbreaking research in advanced analytical modeling and test method development for organic matrix composite materials. His selection as an ASME Fellow recognizes his individual achievement and contributions and enhances the directorate's reputation as a world leader in materials and materials testing-related research and development.

Background

Dr. Roy, a researcher in the directorate's Structural Materials Branch, is responsible for conducting and managing basic research activities in mechanics of composite materials, particularly in the area of novel material forms and analytical tools for failure analysis of composite materials. He is responsible for managing a technology portfolio to develop advanced composite materials technology in organic matrix composites and complex materials forms.

Dr. Roy served as the Department of Defense focal point for carbon foam technology. Carbon foam is a tailorable ultra-lightweight and high-temperature multifunctional material.

Dr. Roy's staff developed an analytical/numerical tool to perform stress analysis of three-dimensionally reinforced composites. This software provides the first comprehensive fracture mechanics methodology for failure analysis of textile composites by explicitly modeling the complex and curved interface surface stress and displacement continuity of intricate textile reinforcements.

Dr. Roy also initiated and led an integrated analytical and experimental program on predicting three-dimensional thermo-elastic behavior of thick laminated composites and carbon-carbon composites. His development of unique test methods for characterizing matrix-dominated properties is key to enhancing performance of carbon-carbon composites.

Dr. Roy has published over 75 papers in peer-reviewed journals and proceedings and co-authored two chapters in a composite design book. He received a best paper award from the American Institute of Aeronautics and Astronautics for his work on wave attenuation in periodic structures.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-ML-01)